

ABSTRACT

A powerful high frequency shock absorber/accelerator uses compressed air but maintains a substantially uniform level of force throughout retraction and extension strokes. A piston moving in an inner chamber compresses gas in the chamber. Initially, an aperture allows compressed gas to be pushed to an outer storage chamber surrounding the inner chamber. As the piston moves further, sealing structure seals gas coming through the aperture thereby isolating the compressed air in the outer chamber from the inner chamber. At the end of the retraction stroke the small amount of remaining air is vented to outside and the piston faces a small counterforce-generating member. When the extension stroke is initiated the counterforce-generating member moves the piston a small distance until the seal is broken. The force of the compressed air rushing back into the inner chamber drives the extension stroke. Additional embodiments include replacing outer chamber with external source of gas.